

Document details

< Back to results | 1 of 3 Next >

Export Download Print E-mail Save to PDF Add to List More... >

View at Publisher

International Journal of Applied Pharmaceutics
Volume 11, Issue 1, January-February 2019, Pages 34-37

Development and validation of uv-vis spectroscopic method of assay of carbamazepine in microparticles (Article) (Open Access)

Mawazi, S.M.^{a,d}, Hadi, H.A.B.^a, Al-Mahmood, S.M.A.^b, Doolaanea, A.A.^{a,c} ✉ 👤

^aDepartment of Pharmaceutical Technology, Kulliyyah of Pharmacy, International Islamic University Malaysia, Kuantan Campus, Malaysia

^bDepartment of Basic Medical Science, Kulliyyah of Nursing, International Islamic University Malaysia, Kuantan Campus, Malaysia

^cIKOP Sdn Bhd, Kulliyyah of Pharmacy, International Islamic University Malaysia, Malaysia

View additional affiliations ▾

Abstract

▾ View references (36)

Objective: This study aimed to develop a new, rapid, robust, effective, inexpensive, and accurate UV-Vis method for the quantification analysis of carbamazepine (CBZ) in the carbamazepine-loaded microparticles. Methods: CBZ was encapsulated in ethyl cellulose microparticles by a solvent evaporation method using polyvinyl alcohol (PVA) as a stabilizer. Methanol was used to dissolve CBZ followed by dilution with distilled water as diluent. CBZ drug, excipients, and microparticles were subjected to specificity, solution stability, linearity, precision and accuracy to confirm and ensure the validity of this method. Results: The results showed no interference from the excipients in the selected wavelength 286 nm. It was exhibited linearity in the range 2-12 µg/ml with $R^2 = 0.9992$. CBZ solution was stable during 24 h. Accuracy and precision were within the accepted limits (100±2%). All results were in accordance to the ICH-Q2 guideline. Conclusion: As a conclusion, CBZ could be quantified from loaded EC microparticles using UV-Vis spectrophotometer at 286 nm. Therefore, this method can be used for the quantification analysis of CBZ in CBZ-loaded microparticles can be utilized also as an alternative method to calculate CBZ in different dosage forms. © 2019 The Authors.

SciVal Topic Prominence ⓘ

Topic: Valproic Acid | Carbamazepine | Plasma

Prominence percentile: 70.527 ⓘ

Reaxys Database Information

View Compounds

Author keywords

Carbamazepine Method validation Microparticles Spectrophotometer UV-Vis

Indexed keywords

EMTREE drug terms: carbamazepine drug vehicle ethyl cellulose polyvinyl alcohol

Metrics ⓘ

0 Citations in Scopus
0 Field-Weighted Citation Impact



PlumX Metrics ▾
Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert >
Set citation feed >

Related documents

Earth-friendly spectrophotometric methods for simultaneous determination of ledipasvir and sofosbuvir: Application to average content and uniformity of dosage unit testing

EL-Shorbagy, H.I. , Elsebaei, F. , Hammad, S.F.
(2018) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*

Principles of Analytical Validation
McMillan, J.
(2013) *Proteomic Profiling and Analytical Chemistry*

Development and validation of HPTLC method for estimation of acyclovir in formulations

Shankar Maruti, D. , Kumar Banerjee, S.
(2013) *International Journal of Research in Pharmaceutical Sciences*

View all related documents based on references

EMTREE medical terms:

- accuracy
- Article
- binding affinity
- drug formulation
- drug release
- drug solubility
- drug specificity
- drug stability
- flow rate
- limit of detection
- limit of quantitation
- retention time
- scanning electron microscopy
- ultraviolet visible spectroscopy
- validation process

Find more related documents in Scopus based on:

Authors > Keywords >

Chemicals and CAS Registry Numbers:

carbamazepine, 298-46-4, 8047-84-5; ethyl cellulose, 9004-57-3; polyvinyl alcohol, 37380-95-3, 9002-89-5

Device tradename:

UV-1800, Shimadzu, Japan

Manufacturers:

Drug manufacturer:

Merck, Germany;

Anuja Healthcare, India;

Dow, United States

Device manufacturer:

Shimadzu, Japan

Funding details

| Funding sponsor | Funding number | Acronym |
|---|----------------|---------|
| International Islamic University Malaysia | | |

Funding text

This work was funded by IIUM Research Initiative Grant Scheme (Grant Number. RIGS15-092-0092 and Grant no. RIGS16-114-0278).

ISSN: 09757058

Source Type: Journal

Original language: English




DOI: 10.22159/ijap.2019v11i1.26256

Document Type: Article

Publisher: Innovare Academics Sciences Pvt. Ltd

References (36)

View in search results format >

- ☐ All
- Export
-  Print
-  E-mail
-  Save to PDF
- Create bibliography

☐ 1

Gorog, S.
(1995) *Ultraviolet-Visible Spectrophotometry in Pharmaceutical Analysis: Application of UV-VIS Spectroscopy in Pharmaceutical*. Cited 61 times.
CRC

☐ 2

Mehta, A.
Ultraviolet-visible (UV-Vis) spectroscopy-derivation of beer-lambert law
(2012) *Analytical Chemistry*. Cited 4 times.
[Last accessed on 20 Feb 2018]
pharmaxchange.info